

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/S78 992  
Source: IPNP  
Date Processed by STIC: 5-31-06

***ENTERED***

**CRF Errors Edited by the STIC Systems Branch**

Serial Number:

10/578, 992

CRF Edit Date:

5-31-06

Edited by:

ZCL

— Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

— Corrected the SEQ ID NO. Sequence numbers edited were:

— Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

Deleted: \_\_\_\_\_ invalid beginning/end-of-file text ; \_\_\_\_\_ page numbers

— Inserted mandatory headings/numeric identifiers, specifically:

— Moved responses to same line as heading/numeric identifier, specifically:

— Other:



IFWP

**RAW SEQUENCE LISTING**

PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006

TIME: 15:18:42

Input Set : A:\PTO.KD.txt  
 Output Set: N:\CRF4\05312006\J578992.raw

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3 <110> APPLICANT: Nielsen, Anders Vikso
4     Norman, Barrie Edmund
5     Landvik, Sara
7 <120> TITLE OF INVENTION: Method for producing glucoamylases and their uses
9 <130> FILE REFERENCE: 10362.204-US
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/578,992
C--> 11 <141> CURRENT FILING DATE: 2006-05-11
11 <160> NUMBER OF SEQ ID NOS: 13
13 <170> SOFTWARE: PatentIn version 3.3
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16 <211> LENGTH: 2427
17 <212> TYPE: DNA
18 <213> ORGANISM: Athelia rolfsii
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23 <222> LOCATION: (1)..(208)
25 <220> FEATURE:
26 <221> NAME/KEY: Intron
27 <222> LOCATION: (209)..(283)
29 <220> FEATURE:
30 <221> NAME/KEY: CDS
31 <222> LOCATION: (284)..(354)
33 <220> FEATURE:
34 <221> NAME/KEY: Intron
35 <222> LOCATION: (355)..(410)
37 <220> FEATURE:
38 <221> NAME/KEY: misc_feature
39 <222> LOCATION: (367)..(367)
40 <223> OTHER INFORMATION: Nucleotide within intron - any nucleotide.
42 <220> FEATURE:
43 <221> NAME/KEY: misc_feature
44 <222> LOCATION: (392)..(392)
45 <223> OTHER INFORMATION: Nucleotide within intron - any nucleotide.
47 <220> FEATURE:
48 <221> NAME/KEY: CDS
49 <222> LOCATION: (411)..(557)
51 <220> FEATURE:
52 <221> NAME/KEY: Intron
53 <222> LOCATION: (558)..(616)
55 <220> FEATURE:
56 <221> NAME/KEY: CDS
57 <222> LOCATION: (617)..(770)
59 <220> FEATURE:
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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006

TIME: 15:18:42

Input Set : A:\PTO.KD.txt  
 Output Set: N:\CRF4\05312006\J578992.raw

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60 <221> NAME/KEY: Intron
61 <222> LOCATION: (771)..(825)
63 <220> FEATURE:
64 <221> NAME/KEY: CDS
65 <222> LOCATION: (826)..(986)
67 <220> FEATURE:
68 <221> NAME/KEY: Intron
69 <222> LOCATION: (987)..(1058)
71 <220> FEATURE:
72 <221> NAME/KEY: CDS
73 <222> LOCATION: (1059)..(1331)
75 <220> FEATURE:
76 <221> NAME/KEY: Intron
77 <222> LOCATION: (1332)..(1409)
79 <220> FEATURE:
80 <221> NAME/KEY: CDS
81 <222> LOCATION: (1410)..(1713)
83 <220> FEATURE:
84 <221> NAME/KEY: Intron
85 <222> LOCATION: (1714)..(1787)
87 <220> FEATURE:
88 <221> NAME/KEY: CDS
89 <222> LOCATION: (1788)..(1958)
91 <220> FEATURE:
92 <221> NAME/KEY: Intron
93 <222> LOCATION: (1959)..(2020)
95 <220> FEATURE:
96 <221> NAME/KEY: CDS
97 <222> LOCATION: (2021)..(2116)
99 <220> FEATURE:
100 <221> NAME/KEY: Intron
101 <222> LOCATION: (2117)..(2173)
103 <220> FEATURE:
104 <221> NAME/KEY: CDS
105 <222> LOCATION: (2174)..(2325)
107 <400> SEQUENCE: 1
108 atg ttt cgt tca ctc ctg gcc ttg gct gcg tgt gca gtc gcc tct gta      48
109 Met Phe Arg Ser Leu Leu Ala Leu Ala Ala Cys Ala Val Ala Ser Val
110 1          5           10          15
112 tct gca cag tct gct tat ctt acc aag gaa tct gca      96
113 Ser Ala Gln Ser Ala Ser Ala Thr Ala Tyr Leu Thr Lys Glu Ser Ala
114          20          25          30
116 gtt gcc aag aat ggc gta ctt tgc aac att ggt agc cag gga tgc atg      144
117 Val Ala Lys Asn Gly Val Leu Cys Asn Ile Gly Ser Gln Gly Cys Met
118          35          40          45
120 tct gag ggt gcc tat agc ggt att gtg atc gca tct ccc tct aaa act      192
121 Ser Glu Gly Ala Tyr Ser Gly Ile Val Ile Ala Ser Pro Ser Lys Thr
122          50          55          60
124 agc cct gac tat ctc t gtgagttat tttgtaaagt agcctcactg atagtgacatt      248

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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006  
TIME: 15:18:42

Input Set : A:\PTO.KD.txt  
Output Set: N:\CRF4\05312006\J578992.raw

125	Ser Pro Asp Tyr Leu	
126	65	
128	ttctgagttc tgttacaacc ctggattat aatag at acc tgg act cgc gac	300
129	Tyr Thr Trp Thr Arg Asp	
W--> 130	75	
132	tcg tcg ctc gtc ttc aag atg tta att gac caa tac aca aat ggc ctg	348
133	Ser Ser Leu Val Phe Lys Met Leu Ile Asp Gln Tyr Thr Asn Gly Leu	
134	80 85 90	
W--> 136	gat acg gtatgtggca tcngcggtcc ggctcgccctc aaagatgnaa aattgatgtt	404
137	Asp Thr	
140	tcttag aca ctg cgc act ctc att gac gag ttt gtc tct gcg gaa gcc	452
141	Thr Leu Arg Thr Leu Ile Asp Glu Phe Val Ser Ala Glu Ala	
142	95 100 105	
144	acc att caa caa acc agt aac cca tct ggt acc gtc tct acc ggt ggt	500
145	Thr Ile Gln Gln Thr Ser Asn Pro Ser Gly Thr Val Ser Thr Gly Gly	
146	110 115 120	
148	ctc ggc gaa ccc aaa ttc aat atc gac gag acg gca ttt acg ggc gca	548
149	Leu Gly Glu Pro Lys Phe Asn Ile Asp Glu Thr Ala Phe Thr Gly Ala	
150	125 130 135	
152	tgg ggt cgt gtaagctacc aatacacaat caaaaatcgac catctgtatt	597
153	Trp Gly Arg	
154	140	
156	tactatctat aatttcttag ccc caa cgt gat ggt ccc gcc ctc cgt gca acc	649
157	Pro Gln Arg Asp Gly Pro Ala Leu Arg Ala Thr	
158	145 150	
160	gca atc atg acc tat gcg acg tat ctg tac aac aat ggc aac act tcc	697
161	Ala Ile Met Thr Tyr Ala Thr Tyr Leu Tyr Asn Asn Gly Asn Thr Ser	
162	155 160 165	
164	tac gtg acc aac acc ctt tgg cct atc atc aag ctc gac ctt gac tat	745
165	Tyr Val Thr Asn Thr Leu Trp Pro Ile Ile Lys Leu Asp Leu Asp Tyr	
166	170 175 180 185	
168	gtc aac tcg gac tgg aac cag acc a gtaagcgaat ttctaggggg	790
169	Val Asn Ser Asp Trp Asn Gln Thr	
170	190	
172	acttatctaa aacagcatat tcaaccagta aatag cg ttt gac ctc tgg gaa	842
173	Thr Phe Asp Leu Trp Glu	
174	195	
176	gaa gtt gac tcg tct ttc ttt acg act gcc gtt cag cac cgt gct	890
177	Glu Val Asp Ser Ser Phe Phe Thr Thr Ala Val Gln His Arg Ala	
178	200 205 210 215	
180	ctt gtt cag ggc gca gcc ttt gct acc ctc atc ggc caa act tcg tct	938
181	Leu Val Gln Gly Ala Ala Phe Ala Thr Leu Ile Gly Gln Thr Ser Ser	
182	220 225 230	
184	gct tcg act tac tcc gcc acg gcc cct acg att ctc tgc ttc ttg cag	986
185	Ala Ser Thr Tyr Ser Ala Thr Ala Pro Ser Ile Leu Cys Phe Leu Gln	
186	235 240 245	
188	gtgagataaa aatcttcta tgtaatttgtt tttccccctc aaattgaaat tgacatattt	1046
190	gcatccaaat ag tct tac tgg aac acc aac gga tac tgg acg gcc aac act	1097
191	Ser Tyr Trp Asn Thr Asn Gly Tyr Trp Thr Ala Asn Thr	

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006  
TIME: 15:18:42

Input Set : A:\PTO.KD.txt  
Output Set: N:\CRF4\05312006\J578992.raw

192	250	255	260	
194 ggt ggc gga cgt tcc ggc aag gac gcc aac acc ata ctc gct tct atc				1145
195 Gly Gly Arg Ser Gly Lys Asp Ala Asn Thr Ile Leu Ala Ser Ile				
196 265 270 275				
198 cac aca ttt gac gcc agc gcc ggc tgc tct gct gcc acg tct caa cca				1193
199 His Thr Phe Asp Ala Ser Ala Gly Cys Ser Ala Ala Thr Ser Gln Pro				
200 280 285 290				
202 tgc tct gac gta gca ttg gcc aac ctg aag gta tac gtt gac tct ttc				1241
203 Cys Ser Asp Val Ala Leu Ala Asn Leu Lys Val Tyr Val Asp Ser Phe				
204 295 300 305				
206 cgt agt att tat acg atc aac agc ggt att tcc tct acc tcg ggt gtt				1289
207 Arg Ser Ile Tyr Thr Ile Asn Ser Gly Ile Ser Ser Thr Ser Gly Val				
208 310 315 320				
210 gct act ggt cgc tac ccc gaa gat tcg tat tac aat ggc aac				1331
211 Ala Thr Gly Arg Tyr Pro Glu Asp Ser Tyr Tyr Asn Gly Asn				
212 325 330 335				
214 gtacgtattt atctaatttt tccaagacag tcaaagtta tgttcatctg ccccctttta				1391
216 cctgtacatt caaaatag ccc tgg tac ctc tgc aca ctc gcc gtc gcc gag				1442
217 Pro Trp Tyr Leu Cys Thr Leu Ala Val Ala Glu				
218 340 345				
220 cag ctc tat gat gct ctc atc gta tgg aag gct gcc ggg gag ctc aac				1490
221 Gln Leu Tyr Asp Ala Leu Ile Val Trp Lys Ala Ala Gly Glu Leu Asn				
222 350 355 360 365				
224 gtc acc tcc gtc tcg ctc gcg ttc ttc cag caa ttc gac tcg agc atc				1538
225 Val Thr Ser Val Ser Leu Ala Phe Phe Gln Gln Phe Asp Ser Ser Ile				
226 370 375 380				
228 acc gcc ggc act tac gcc tcc tcg tcg agc gta tac act tcg ctc atc				1586
229 Thr Ala Gly Thr Tyr Ala Ser Ser Ser Val Tyr Thr Ser Leu Ile				
230 385 390 395				
232 tct gac atc cag gcg ttc gca gac gag ttt gtt gac att gtt gcc aag				1634
233 Ser Asp Ile Gln Ala Phe Ala Asp Glu Phe Val Asp Ile Val Ala Lys				
234 400 405 410				
236 tac acg cct tcg tct ggc ttc ttg tct gag cag tat gat aag tcc acg				1682
237 Tyr Thr Pro Ser Ser Gly Phe Leu Ser Glu Gln Tyr Asp Lys Ser Thr				
238 415 420 425				
240 ggt gct cag gat tcg gct gct aac ttg act t gtaagtcatc tatttgttca				1733
241 Gly Ala Gln Asp Ser Ala Ala Asn Leu Thr				
242 430 435				
244 ttctattcct tttcaaaaaaaa aaaagtgtatg ctaatgattt ttggcggaaa ccag gg				1789
245 Trp				
W--> 248 tcc tat gct gct atc acc gct tac caa gcc cgc aat ggc ttc aca				1837
249 Ser Tyr Ala Ala Ile Thr Ala Tyr Gln Ala Arg Asn Gly Phe Thr				
W--> 250 445 450 455				
252 ggt gct tcg tgg ggt gct aag gga gtt tct acc tcc tgc tcg act ggt				1885
253 Gly Ala Ser Trp Gly Ala Lys Gly Val Ser Thr Ser Cys Ser Thr Gly				
254 460 465 470				
256 gct aca agc ccg ggt ggc tcc tcg ggt agt gtc gag gtc act ttc gac				1933
257 Ala Thr Ser Pro Gly Gly Ser Ser Gly Ser Val Glu Val Thr Phe Asp				
258 475 480 485				

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/10/578,992**

**DATE: 05/31/2006**  
**TIME: 15:18:42**

**Input Set : A:\PTO.KD.txt**  
**Output Set: N:\CRF4\05312006\J578992.raw**

260 gtt tac gct acc aca gta tat ggc c gtaagcactt gactagcttc	1978
261 Val Tyr Ala Thr Thr Val Tyr Gly	
262 490 495	
264 aaaccatact tcatacatgct gataaaacaaa aaaatgaaac ag ag aac atc tat	2031
W--> 265 Gln Asn Ile Tyr	
266 500	
268 atc acc ggt gat gtg agt gag ctc ggc aac tgg aca ccc gcc aat ggt	2079
269 Ile Thr Gly Asp Val Ser Glu Leu Gly Asn Trp Thr Pro Ala Asn Gly	
270 505 510 515	
272 gtt gca ctc tct tct gct aac tac ccc acc tgg agt g gtaagttgac	2126
273 Val Ala Leu Ser Ser Ala Asn Tyr Pro Thr Trp Ser	
274 520 525	
276 ctttaccagt atcttgacag acattgatat tgacttccgc aatacag cc acg atc	2181
277 Ala Thr Ile	
278 530	
280 gct ctc ccc gct gac acg aca atc cag tac aag tat gtc aac att gac	2229
281 Ala Leu Pro Ala Asp Thr Thr Ile Gln Tyr Lys Tyr Val Asn Ile Asp	
282 535 540 545	
284 ggc agc acc gtc atc tgg gag gat gct atc agc aat cgc gag atc acg	2277
285 Gly Ser Thr Val Ile Trp Glu Asp Ala Ile Ser Asn Arg Glu Ile Thr	
286 550 555 560	
288 acg ccc gcc agc ggc aca tac acc gaa aaa gac act tgg gat gaa tct	2325
289 Thr Pro Ala Ser Gly Thr Tyr Thr Glu Lys Asp Thr Trp Asp Glu Ser	
290 565 570 575	
292 taaaactgctg aacttgaacg gcttgaaaaa gcgaatggtg tagaaaataa acgaagattt	2385
294 tgattgctt gtttttttc ttttcctatc ttgttctct ag	2427
297 <210> SEQ ID NO: 2	
298 <211> LENGTH: 579	
299 <212> TYPE: PRT	
300 <213> ORGANISM: Athelia rolfsii	
302 <400> SEQUENCE: 2	
304 Met Phe Arg Ser Leu Leu Ala Leu Ala Ala Cys Ala Val Ala Ser Val	
305 1 5 10 15	
308 Ser Ala Gln Ser Ala Ser Ala Thr Ala Tyr Leu Thr Lys Glu Ser Ala	
309 20 25 30	
312 Val Ala Lys Asn Gly Val Leu Cys Asn Ile Gly Ser Gln Gly Cys Met	
313 35 40 45	
316 Ser Glu Gly Ala Tyr Ser Gly Ile Val Ile Ala Ser Pro Ser Lys Thr	
317 50 55 60	
320 Ser Pro Asp Tyr Leu Tyr Thr Trp Thr Arg Asp Ser Ser Leu Val Phe	
321 65 70 75 80	
324 Lys Met Leu Ile Asp Gln Tyr Thr Asn Gly Leu Asp Thr Thr Leu Arg	
325 85 90 95	
328 Thr Leu Ile Asp Glu Phe Val Ser Ala Glu Ala Thr Ile Gln Gln Thr	
329 100 105 110	
332 Ser Asn Pro Ser Gly Thr Val Ser Thr Gly Gly Leu Gly Glu Pro Lys	
333 115 120 125	
336 Phe Asn Ile Asp Glu Thr Ala Phe Thr Gly Ala Trp Gly Arg Pro Gln	
337 130 135 140	

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006  
TIME: 15:18:43

Input Set : A:\PTO.KD.txt  
Output Set: N:\CRF4\05312006\J578992.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 367,392

**VERIFICATION SUMMARY**  
PATENT APPLICATION: US/10/578,992

DATE: 05/31/2006  
TIME: 15:18:43

Input Set : A:\PTO.KD.txt  
Output Set: N:\CRF4\05312006\J578992.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:130 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:136 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:348  
L:248 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:250 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:265 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 1

## **Raw Sequence Listing before editing (for reference only)**



IFWP

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/10/578,992

DATE: 05/22/2006  
TIME: 14:13:06

Input Set : A:\01-SQ Listing-10 May 2006.txt  
Output Set: N:\CRF4\05222006\J578992.raw

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3 <110> APPLICANT: Nielsen, Anders Vikso
4      Norman, Barrie Edmund
5      Landvik, Sara
7 <120> TITLE OF INVENTION: Method for producing glucoamylases and their uses
9 <130> FILE REFERENCE: 10362.204-US
C--> 11 <140> CURRENT APPLICATION NUMBER: US/10/578,992
C--> 11 <141> CURRENT FILING DATE: 2006-05-11
11 <160> NUMBER OF SEQ ID NOS: 13
13 <170> SOFTWARE: PatentIn version 3.3

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Does Not Comply  
Corrected Diskette Needed

(pg. 1)

#### ERRORED SEQUENCES

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572 <210> SEQ ID NO: 13
573 <211> LENGTH: 37
574 <212> TYPE: DNA
575 <213> ORGANISM: Artificial sequence
577 <220> FEATURE:
578 <223> OTHER INFORMATION: Primer 240303P1
580 <400> SEQUENCE: 13
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E--> 587 11

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37

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VERIFICATION SUMMARY  
PATENT APPLICATION: US/10/578,992

DATE: 05/22/2006  
TIME: 14:13:08

Input Set : A:\01-SQ Listing-10 May 2006.txt  
Output Set: N:\CRF4\05222006\J578992.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No  
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:130 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:136 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:348  
L:248 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:250 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1  
L:265 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 1  
L:587 M:254 E: No. of Bases conflict, this line has no nucleotides.